WHAT IS CLAIMED IS:

1. A substrate having a hydrophobic surface coating comprised of a silicon oxide anchor layer which exhibits a root mean square surface roughness of less than about 6.0 nm.

2. The substrate of claim 1, wherein the anchor layer exhibits a surface roughness of less than about 5.0 nm.

3. The substrate of claim 1, wherein the anchor layer exhibits a surface roughness of greater than about 4.0 nm.

4. The substrate of claim 1, wherein the hydrophobic coating further comprises the humidified vapor-deposited reaction product of at least one alkylchlorosilane applied over the anchor layer.

5. The substrate of claim 4, wherein the alkylchlorosilane is dimethyldichlorosilane or trimethylchlorosilane.

6. The substrate of claim 1, wherein the hydrophobic coating comprises a layer of a humidified vapor-deposited reaction product of dimethyldichlorosilane (DMDCS) on the silicon oxide anchor layer, and a layer of a humidified vapor-deposited reaction product of trimethylchlorosilane (TMCS) applied over the DMDCS layer.

7. The substrate of claim 1, wherein the hydrophobic coating comprises a layer of polydimethylsiloxane (PDMSO) chemically bound to said anchor layer.

8. The substrate of claim 1, wherein the hydrophobic coating comprises a layer of cross-linked polysiloxane chemically bound to said anchor layer.

9. The substrate of claim 8, wherein the hydrophobic coating comprises at least one layer which is the humidified vapor-deposited reaction product of dimethyldichlorosilane (DMDCS) or trimethylchlorosilane (TMCS) applied over the cross-linked polysiloxane layer.

10. A substrate having a hydrophobic surface coating comprised of a silicon oxide anchor layer exhibiting a haze value of less than about 3.0%.

11. The substrate of claim 10, wherein the anchor layer exhibits a haze value of less than about 2.0%.

12. The substrate of claim 10, wherein the anchor layer exhibits a haze value of less than about 1.5%.

13. A substrate which comprises a hydrophobic coating having an anchor layer on a surface of the substrate comprised of a humidified reaction product of silicon tetrachloride vapor-deposited at a relative humidity of less than about 50%.

14. The substrate of claim 13, wherein the silicon tetrachloride is vapor-deposited at a relative humidity of less than about 45%.

15. The substrate of claim 13, wherein the silicon tetrachloride is vapor-deposited at a relative humidity of less than about 40%.

16. The substrate of claim 13, wherein said hydrophobic coating is comprised of the humidified reaction product of said silicon tetrachloride and an alkylchlorosilane.

17. The substrate of claim 16, wherein said alkylchlorosilane includes trimethylchlorosilane (TMCS).

18. The substrate of claim 17, wherein said silicon tetrachloride and TMCS are vapor-deposited as a mixture.

19. The substrate of claim 18, wherein said mixture contains a ratio of said silicon tetrachloride to TMCS of between about 4.0:.05 to about 4.0:1.5.

20. The substrate of claim 18, wherein said mixture contains a ratio of said silicon tetrachloride to TMCS of about 4.0:1.0.

21. A substrate having a hydrophobic coating comprised of the reaction products of a chlorosilyl group containing compound and a chloroalkylsilane.

22. The substrate of claim 21, wherein said hydrophobic coating comprises an underlayer which includes said chlorosilyl group containing compound, and a capping layer over said underlayer which includes said chloroalkylsilane.

23. The substrate of claim 22, wherein said underlayer also includes a second chloroalkylsilane different from said chloroalkylsilane in said capping layer.

24. The substrate as in claim 21, wherein the underlayer includes the humidified vapor deposition reaction product of silicon tetrachloride.

25. The substrate of claim 24, wherein the capping layer includes at least one alkylsilane selected from the group consisting of $SiCl_2(CH_3)_2$, $CF_3(CF_2)_5(CH_2)2SiCl(CH_3)_2$ and $(CF_3)_2FC\text{-}O(CH_2)_3SiCl_2CH_3$.

26. The substrate of claim 21, wherein the hydrophobic coating includes an underlayer of cross-linked polydimethylsiloxane and a capping layer over said underlayer of the reaction product of a fluoroalkylsilane.

27. The substrate of claim 26, wherein said fluoroalkylsilane is $CF_3(CF_2)_5(CH_2)2SiCl(CH_3)_2$ or $(CF_3)_2FC\text{-}O(CH_2)_3SiCl_2CH_3$.

28. The substrate of claim 21, having a tilt angle of about 35^0 or less, and a contact angle after 300 Taber abrasion cycles of greater than about 65^0.

29. The substrate of claim 28, having a tilt angle of about 20^0 or less, and a contact angle after 300 Taber abrasion cycles of greater than about 70^0.

30. A glass substrate having a hydrophobic surface coating comprised of an underlayer of cross-linked polysiloxane, and a capping layer which is the reaction product of a fluoroalkylsilane, said surface coating exhibiting a tilt angle (30 μL drop) of about 35^0 or less, and a contact angle of greater than about 65^0.

31. The glass substrate of claim 30, wherein the fluoroalkylsilane is $CF_3(CF_2)_5(CH_2)2SiCl(CH_3)_2$ or $(CF_3)_2FC\text{-}O(CH_2)_3SiCl_2CH_3$.

32. A process for forming hydrophobic coatings on substrates comprising contacting a surface of the substrate to be coated with vapors of a chlorosilyl group containing compound, and an alkylsilane in a humid room temperature atmosphere.

33. The process of claim 32, wherein the vapor of the chlorosilyl group containing compound and the vapor of the alkylsilane are brought sequentially into contact with the substrate.

34. The process of claim 33, wherein the chlorosilyl group containing compound is silicon tetrachloride, and wherein the chloroalkylsilane is dimethyldichlorosilane (DMDCS).

35. The process of claim 32, wherein the vapors of the chlorosilyl group containing compound and the alkylsilane are brought into contact simultaneously with the substrate.

36. The process of claim 30, wherein the chloroalkylsilane compound is silicon tetrachloride, and wherein the chloroalkylsilane is dimethyldichlorosilane (DMDCS) or trimethylchlorosilane (TMCS).

37. The process of claim 36, where the chloroalkylsilane comprises DMDCS and wherein a weight ratio of silicon tetrachloride to DMDCS is from about 1:1 to 1:30.

38. The process of claim 37, wherein the weight ratio is from about 1:5 to about 1:15.

39. The process of claim 36, wherein the chloroalkylsilane comprises TMCS and wherein weight ratio of silicon tetrachloride to TMCS is from about 4.0:0.5 to about 4.0:1.5.

40. The process of claim 39, wherein the weight ratio is about 4.0:1.0.

41. The process of claim 32, which further comprises applying a capping layer onto the substrate by contacting the substrate with a fluoroalkylsilane (FAS).

42. The process of claim 41, wherein the FAS is applied as a liquid over the vapor deposited coating.

43. The process of claim 42, wherein the FAS is $CF_3(CF_2)_5(CH_2)2SiCl(CH_3)_2$ or $(CF_3)_2FC\text{-}O(CH_2)_3SiCl_2CH_3$.

44. A process for forming a hydrophobic coating on a glass substrate comprising:

(a) contacting a surface of the glass substrate to be coated with a silicon tetrachloride vapor for a time sufficient to form a silicon oxide layer on the surface of the glass substrate; and then

(b) simultaneously contacting the silicon oxide layer with vapors of silicon tetrachloride and dimethyldichlorosilane (DMDCS) for a time sufficient

to form a cross-linked layer of polydimethylsiloxane (PDMSO).

45. The process of claim 44, which further comprises (c) subsequently applying a fluoroalkylsilane (FAS) capping layer over said cross-linked layer of PDMSO layer.

46. The process of claim 44, wherein the weight ratio of silicon tetrachloride to DMDCS is from about 1:1 to about 5:1.

47. The process of claim 46, wherein the weight ratio is from about 3:1 to about 4:1.

48. The process of claim 45, wherein the FAS is applied as a liquid over the PDMSO layer.

49. The process of claim 48, wherein the FAS is $CF_3(CF_2)_5(CH_2)2SiCl(CH_3)_2$ or $(CF_3)_2FC\text{-}O(CH_2)_3SiCl_2CH_3$.

50. A process for forming a hydrophobic coating on a glass substrate comprising simultaneously contacting the glass substrate with vapors of silicon tetrachloride and trimethylchlorosilane (TMCS) for a time sufficient to form a hydrophobic coating thereon.

51. The process of claim 50, which further comprises subsequently applying a capping layer.

52. The process of claim 50, wherein the weight ratio of silicon tetrachloride to TMCS is from about 4.0:0.5 to about 4.0:1.5.

53. The process of claim 52, wherein the weight ratio is about 4.0:1.0.

54. The process of claim 50, which comprises forming a liquid mixture of liquid silicon tetrachloride and TMCS, and depositing a vapor of the mixture onto the substrate.

55. A coated glass substrate made by the process of claim 44.

56. The substrate of claim 4, wherein the alkylchlorosilanes comprise dimethyldichlorosilane and methyltrichlorosilane.

57. The substrate of claim 4, wherein the alkylchlorosilanes are dimethyldichlorosilane and methyltrichlorosilane and are added in equimolar amounts.

58. The substrate of claim 56 wherein the ratios of dimethyldichlorosilane and methyltrichlorosilane are in the range of from 5 part to 1 part to about 1 part to 3 part respectively by weight.

59. The substrate of claim 56 wherein the alkyl chlorosilane layer is capped with methyltrichlorosilane.

60. The substrate of claim 56 wherein the alkyl chlorosilane layer is capped with a fluoroalkylsilaneFAS(B).

61. The substrate of claim 1 wherein the hydrophobic coating comprises a layer of a humidified vapor-deposited reaction product of dimethyldichlorosilane and methyltrichlorosilane on the silicon oxide anchor layer, and a capping layer of a humidified vapor-deposited reaction

product of trimethyl chlorosilane applied over the DMDCS and TMCS layer.

62. The substrate of claim 4 wherein the alkylchlorosilanes are dimethyldichlorosilane, methyltrichlorosilane, and silicon tetrachloride added to the reaction chamber in equimolar amounts.

63. The substrate of claim 62 wherein the FAS(B) is added as a capping layer.

64. A substrate having a hydrophobic surface coating comprised of a hybridized organo-silicon oxide anchor layer, SiO_xR_y wherein y is at least one and is an organic group having 6 or less carbons and x is at least one, the substrate having a root mean square surface roughness of less than about 6.0 nm.

65. The substrate of claim 64 wherein the anchor layer exhibits a surface roughness of less than about 5.0 nm.

66. The substrate of claim 64 wherein the anchor layer exhibits a surface roughness of greater than about 4.0 nm.

67. The substrate of claim 64 wherein the hydrophobic surface coating further comprises at least one humidified vapor-deposition reaction product of at least one alkylchlorosilane, chlorosilane, or both applied over the anchor layer.

68. The substrate of claim 64 wherein the hybridized organo-silicon oxide anchor layer is derived from vapor deposited trichloromethylsilane.

69. The substrate of claim 67 wherein the silanes are dimethyldichlorosilane and silicon tetrachloride.

70. The substrate of claim 64, further comprising a capping layer of FAS(B), methyltrichlorosilane, or both.